

62D CONGRESS, } HOUSE OF REPRESENTATIVES, { DOCUMENT
3d Session. } No. 128.

BASS HARBOR BAR AND DEER ISLAND THOROUGHFARE,
ME.

LETTER

FROM

THE SECRETARY OF WAR,

TRANSMITTING,

WITH A LETTER FROM THE ACTING CHIEF OF ENGINEERS, REPORTS
ON EXAMINATION AND SURVEY OF BASS HARBOR BAR AND
DEER ISLAND THOROUGHFARE, ME.

DECEMBER 11, 1912.- Referred to the Committee on Rivers and Harbors and ordered
to be printed, with illustrations.

WAR DEPARTMENT,
Washington, December 10 1912.

SIR: I have the honor to transmit herewith a letter from the Acting Chief of Engineers, United States Army, dated 25th ultimo, together with copies of reports from Lieut. Col. W. E. Craighill, Corps of Engineers, dated August 28, 1911, September 13, 1912, and November 1, 1912, with maps, on preliminary examination and survey, respectively, of Bass Harbor Bar and Deer Island Thoroughfare, Me., made by him in compliance with the provisions of the river and harbor act approved June 25, 1910.

Very respectfully,

HENRY L. STIMSON,
Secretary of War.

THE SPEAKER OF THE HOUSE OF REPRESENTATIVES.

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, November 25, 1912.

From: The Chief of Engineers.

To: The Secretary of War.

Subject: Examination and survey of Bass Harbor Bar and Deer Island Thoroughfare, Me.

1. There are submitted herewith, for transmission to Congress, reports dated August 28, 1911, September 13, 1912, and November 1, 1912, with maps, by Lieut. Col. W. E. Craighill, Corps of Engineers, on

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preliminary examination and survey, respectively, of Bass Harbor Bar and Deer Island Thoroughfare, Me., authorized by the river and harbor act approved June 25, 1910.

2. Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island. Deer Island Thoroughfare is a narrow passage about 9 miles long on the southerly side of Deer Island. Both of these localities are on the route used by the many small coasting vessels and steamers plying along the coast of Maine, and the latter is also used by vessels engaged in taking stone from Stonington, which is situated in a cove on the northerly side of the thoroughfare. The improvement desired in each case is an increase in channel dimensions to render navigation safer.

3. The plan recommended by the district officer for improvement of Bass Harbor Bar contemplates the excavation of a channel not less than 14 feet deep at mean low tide for a width of 250 feet across the bar at an estimated cost of about \$10,000. (It is believed that there will be no maintenance work required, and no estimate therefor is submitted.) For the improvement of Deer Island Thoroughfare the district officer proposes to remove obstructing ledges to a depth of 15 feet at mean low tide, for a width of about 300 feet. The cost of this work is estimated at \$40,000 and it is believed that no expenditures for maintenance will be required.

4. These reports have been referred, as required by law, to the Board of Engineers for Rivers and Harbors, to whose report dated November 11, 1912, attention is invited. The board and the division engineer concur in the opinion expressed by the district officer.

5. After due consideration of the above-mentioned reports, I concur in general with the views of the district officer, the division engineer, and the Board of Engineers for Rivers and Harbors, and therefore, in carrying out the instructions of Congress, I report as follows: That the improvement by the United States of Bass Harbor Bar and Deer Island Thoroughfare, Me., is deemed advisable so far as to secure an available channel depth of 14 feet at Bass Harbor Bar and 15 feet at Deer Island Thoroughfare, with channel widths of 250 feet and 300 feet, respectively, increased at entrances and on curves, following in general the methods described in the report of the district officer, at estimated costs of \$10,000 and \$40,000, respectively, these estimates being based on the supposition that the construction work will, as now seems desirable and advantageous, be prosecuted under a first appropriation of the entire estimated cost.

H. TAYLOR,
Lieut. Col., Corps of Engineers,
Acting Chief of Engineers.

REPORT OF THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
ON SURVEY

[Third indorsement.]

THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, November 11, 1912.

TO THE CHIEF OF ENGINEERS, UNITED STATES ARMY.

1. As stated in the report on preliminary examination, Bass Harbor Bar and Deer Island Thoroughfare are distinct places about

BASS HARBOR BAR AND DEER ISLAND THOROUGHFARE, ME. 3

15 miles apart, though they are on the same route and are used by the same class of vessels. The authorized surveys of these localities having been made by the district officer, he submits for the improvement of Bass Harbor Bar a plan contemplating the excavation and marking of a channel not less than 14 feet deep at mean low tide for a width of 250 feet across the bar at the location shown on the accompanying tracing. This work is estimated to cost not to exceed \$10,000, and it is believed that there will be no cost for maintenance except for the preservation of the channel marks. For Deer Island Thoroughfare he proposes to excavate the ledges lying within the area shaded on the related tracing to a depth of 15 feet at mean low tide, for a width of about 300 feet, which will in fact afford a width of about 400 feet to the depth indicated. It is estimated that this work will cost \$40,000. All material above a plane of 15 feet below mean low tide is bare ledge, indicating that there will be no maintenance charge.

2. No new data regarding the commerce using these passages were secured during the progress of the survey except such as corroborate the information given in the report on preliminary examination, in which the general character of commerce using this route was described and explanation given of the need for improvement of the localities in the interests of the many small vessels plying along the coast, as well as for the regular steamers engaged in freight and passenger transportation. As a result of his further investigations, the district officer is convinced that the work outlined should be undertaken for the betterment of navigation at these localities, and the division engineer concurs in his recommendations. After due consideration of the facts presented, the board believes that it is advisable for the United States to undertake the improvement of Bass Harbor Bar and of Deer Island Thoroughfare to the extent indicated above at estimated costs of \$10,000 and \$40,000, respectively. If the work is authorized, the full amount of the estimate for each locality should be appropriated at one time.

3. In compliance with law, the board reports that there are no questions of terminal facilities, water power, or other subjects so related to the project proposed that they may be coordinated therewith to lessen the cost and compensate the Government for expenditures made in the interests of navigation.

For the board:

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Senior Member of the Board.

PRELIMINARY EXAMINATION OF BASS HARBOR BAR AND DEER ISLAND THOROUGHFARE, ME.

UNITED STATES ENGINEER OFFICE,
Portland, Me., August 28, 1911.

SIR: 1. I have the honor to submit the following report on a preliminary examination of Bass Harbor Bar and Deer Island Thoroughfare, Me., directed by the river and harbor act approved June 25, 1910.

2. Though these two localities—Bass Harbor Bar and Deer Island Thoroughfare—are named jointly in the order for examination, they

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are two separate and distinct places, about 15 miles apart, though on the same route of travel for a large class of vessels, and it is presumably on this account that they are named together in the act of 1910.

3. While much of the commerce is common to both places, yet for a clear understanding it will be necessary to discuss them separately.

BASS HARBOR BAR.

4. Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island a distance of about 1 mile to Great Gotts Island. For probably one-half the distance nearest to Mount Desert Island the bar is about one-eighth of a mile across and the water deepens rapidly on each side. There is a lighthouse on Bass Harbor head at the northerly end of the bar. The locality is shown on Coast Survey Chart No. 308, which indicates a depth of about $12\frac{1}{2}$ feet across the bar through a narrow channel about one-eighth of a mile south of the light. It is claimed, however, by mariners that there is only about 11 feet at low water, that the channel is crooked with some bowlders, and that when the sea is running only the shoalest vessels may attempt to cross.

5. I personally inspected the locality June 23, 1911. It is impracticable to give definite statistics as to the commerce at this place. Much of the great movement of small coasting vessels and steamers along the coast of Maine uses the passage. The small coasting vessels which are moving throughout the year run along the coast from harbor to harbor, coming in at night or when the weather is threatening. This necessitates their keeping close to the coast. Bluehill Bay under the lee of Great Gotts, Placentia, and Swan Islands affords good shelter. The wide passage to the southwest would seem to afford a better opportunity, but skippers—and I have talked with several—claim that in coming from the east on the approach of darkness they have to run for Bass Harbor Head light, the only one near, and to secure shelter necessitates crossing the bar. Besides this it is a more direct passage. Towboats are not available on that part of the coast, and in the event of light winds with darkness coming on, or of snowstorms or fogs threatening, it behooves these small craft to secure shelter and to do it as quickly as possible. Aside from the great number of coasting vessels there are regular lines of steamers of the Eastern Steamship Co., Maine Central Railroad Co., Vinalhaven & Rockland Steamboat Co., and Maine Coast Transportation Co. The Sagadahoc Towing Co., which is engaged in the business of towing barges along the coast, states that its tonnage amounts to some 24,000 tons. The movement of lime, stone, and other products by coasting vessels is beyond my resources to estimate, but I am satisfied that it is so important that it should receive serious consideration.

6. What appears to be desired at this locality is that a channel shall be cut through the bar. One interest, the Sagadahoc Towing Co., calls for a depth of 20 feet at mean low tide for a width of at least 300 feet. Other needs, depending on the character and size of the vessels interested, vary from a mere removal of some of the bowlders to the securing of a straight channel 12 to 15 feet in depth.

7. It is evident that there are no matters of water power development or land reclamation which can enter into a project for improvement at this locality. Nor does the matter of wharf or terminal facilities have any bearing.

8. It is my opinion that Bass Harbor Bar is worthy of improvement by the National Government, providing anything of practical benefit can be accomplished at a very moderate cost, which seems to me to be a reasonable probability, and provided also that there are good prospects that such a channel will keep open without assistance. The cost of a survey will be small, and in order to collect the data necessary to a conclusion in these respects it is recommended that a survey be made, the cost of which should not exceed \$300.

DEER ISLAND THOROUGHFARE.

9. Deer Island Thoroughfare is a narrow passage about 9 miles long on the southerly side of Deer Island, which lies on the eastern side of the entrance to Penobscot Bay. The locality is shown on Coast Survey Chart No. 309. It separates Deer Island from a multitude of islands and ledges to the south. The thoroughfare itself is much obstructed by ledges, though it is a much favored road and the one most extensively used, especially by small craft, for similar reasons to those given above in the case of Bass Harbor Bar. It is extensively buoyed and is a dangerous passage to attempt except in the daytime, but, being inside and affording good chances for harbor, is greatly used. While it might seem from a scrutiny of the chart that other passages, especially the one indicated as Merchants Row, might be easier and safer, yet the practical fact remains that vessels insist on going via Deer Island Thoroughfare.

10. This locality is in the midst of a great granite district, and all transportation is of necessity conducted by water. Stonington, which lies on a cove on the northerly side of the Thoroughfare, is a place of considerable importance. There are a number of large granite quarries located along the Thoroughfare and the shipments of stone out, and of supplies in, give rise to considerable commerce aside from that simply passing through. The Maine Central Railroad Co.'s boats make daily round trips four months and two trips per week the balance of the year. The Eastern Steamship Co. runs on the same schedule. The Vinalhaven & Rockland Steamboat Co. makes a daily round trip the year around. The Maine Coast Co. steamers make two trips per week. The sailing vessels which frequent Stonington are from 78 to over 200 feet in length and draw from 7 to 24 feet. The receipts and shipments at Stonington alone are said to amount to about 50,000 tons per annum and the passengers to number from 2,200 to 2,500 per month over one line alone. Mr. John L. Goss, who has large granite quarries, states that there are from 150 to 200 sail per year which take stone from Stonington. The material is distributed all along the Atlantic coast as far south as Galveston. Shipments designed for the interior are carried to railroad points and there reshipped, much of it going through Boston. Vessels coming from the west at night are obliged to stay out in the bay, whereas if the channel were better it is claimed that after making Mark Island Light (Thoroughfare Light) they could go into the Thoroughfare and reach safe anchorage. In addition to the

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tonnage given for Stonington must be added the 24,000 tons handled annually by the Sagadahoc Towing Co. and the great amount of coastwise traffic which I am unable to even estimate.

11. I visited this locality personally June 21, 1911, and my conclusions are the result of my observations as well as interviews and correspondence with others. What is desired is the removal of a few of the more obstructive ledges at and near Stonington.

12. There are no matters of water-power development or land reclamation which can be considered in connection with a project for the improvement at this locality. The stone interests have wharves and terminal facilities sufficient for handling large quantities of material, and many of them are fitted with derricks of considerable capacity. As most of the business consists in this special line of manufacturing or output, and not in general commerce, the matter of wharves and terminal facilities can be safely left to take care of itself. There are abundant wharf sites to be had, and the accommodations undoubtedly can be relied upon to keep pace with the need without any demands on the part of the Government.

13. It is my opinion that Deer Island Thoroughfare is worthy of improvement by the National Government, provided the cost is not excessive. A preliminary examination does not develop this feature satisfactorily, and I think the locality is fully deserving of such further investigation as would result from a survey, which I have the honor to recommend be authorized. The cost should not exceed \$800.

Very respectfully,

W. E. CRAIGHILL,
Lieut. Col., Corps of Engineers.

The CHIEF OF ENGINEERS, UNITED STATES ARMY
(Through Division Engineer).

[First indorsement]

NORTHEAST DIVISION ENGINEER OFFICE,
New York, August 31, 1911.

1. Respectfully forwarded to the Chief of Engineers, United States Army.

2. Bass Harbor Bar: From personal experience along the coast of Maine, I know that the difficulties experienced by navigators in the neighborhood of Bass Harbor Head are not overstated by Lieut. Col. Craighill. A very large amount of traffic, both passenger and freight, passing east along the coast of Maine skirts Mount Desert Island very closely and, coming from the east, passing through Eggemoggin Reach and the Deer Island Thoroughfare, thence through Casco Passage north of Swan Island or through the broader channel to the north of Pond Island, heads for Bass Harbor Light. Lieut. Col. Craighill's recommendations are concurred in.

3. Deer Island Thoroughfare: From a personal knowledge of the locality in question, Lieut. Col. Craighill's recommendations are concurred in.

W. M. BLACK,
Colonel, Corps of Engineers,
Division Engineer.

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[Third indorsement]

THE BOARD OF ENGINEERS FOR RIVERS AND HARBORS,
Washington, September 11, 1911.

1. Respectfully returned to the Chief of Engineers, United States Army.

2. Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island, Me. Coast Chart No. 308 shows a depth of $12\frac{1}{2}$ feet through a narrow channel across the bar, but mariners claim that there is only about 11 feet at low water, that the channel is crooked with some bowlders, and that when the sea is running only the lightest draft vessels may attempt to cross. The passage is used by many small coasting vessels and steamers plying along the coast of Maine, and while the commerce is not susceptible of even approximate determination, the district officer is satisfied that it is of sufficient importance to receive serious consideration. The improvement desired is a channel of suitable dimensions across the bar. The district officer believes the locality worthy of improvement, provided anything of practical benefit and reasonable permanence can be accomplished at moderate cost. To determine these questions he recommends the authorization of a survey at an estimated cost of \$300.

3. Deer Island Thoroughfare is a narrow passage about 9 miles long on the southerly side of Deer Island, Me., and is shown on Coast Chart No. 309. It is much obstructed by ledges and is a dangerous passage to attempt except in the daytime, but being inside and affording good chances for harbor it is greatly used, especially by small craft. This locality is in the midst of an important granite district, and the outward shipment of stone and inward shipment of supplies afford a commerce of considerable importance, the transportation of which is necessarily by water. Stonington, which lies in a cove on the northerly side of the Thoroughfare, is a place of considerable importance, and is visited by several regular lines of steamers making daily or semiweekly trips. It is stated that from 150 to 200 sail per year take stone from Stonington, and the commerce of this place alone is said to amount to about 50,000 tons per annum. The improvement desired is the removal of the more obstructive ledges at and near Stonington. The district officer believes the locality is worthy of improvement provided the cost is not excessive, and to determine this question he recommends a survey at a cost of not to exceed \$800.

4. Having in mind the large commerce that is carried along this part of the coast, mainly in numerous small vessels which must seek the more protected routes, the board concurs with the district officer and division engineer in recommending the authorization of surveys as specified above, with a view to ascertaining the practicability of accomplishing useful and reasonably permanent improvements at justifiable expense.

For the board:

WM. T. ROSSELL,
Colonel, Corps of Engineers,
Senior Member of the Board.

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[Fourth indorsement.]

WAR DEPARTMENT,
OFFICE OF THE CHIEF OF ENGINEERS,
Washington, September 15, 1911.

1. Respectfully submitted to the Secretary of War.
2. This is a report on preliminary examination of Bass Harbor Bar and Deer Island Thoroughfare, Me., authorized by the river and harbor act of June 25, 1910.
3. Inviting attention to the report of the Board of Engineers for Rivers and Harbors in the preceding indorsement, I recommend that a survey of the locality, as proposed, be authorized.

H. TAYLOR,
Acting Chief of Engineers.

[Fifth indorsement.]

WAR DEPARTMENT, *September 15, 1911.*
Approved as recommended by the Acting Chief of Engineers.
ROBERT SHAW OLIVER,
Acting Secretary of War.

SURVEY OF BASS HARBOR BAR AND DEER ISLAND THOROUGHFARE, ME.

UNITED STATES ENGINEER OFFICE,
Portland, Me., September 13, 1912.

From: Lieut. Col. W. E. CRAIGHILL, CORPS OF ENGINEERS.

To: The CHIEF OF ENGINEERS, UNITED STATES ARMY
(Through division engineer).

Subject: Survey of Bass Harbor Bar and Deer Island Thoroughfare, Me.

1. The river and harbor act approved June 25, 1910, directed a preliminary examination of Bass Harbor Bar and Deer Island Thoroughfare, Me. Report on this subject was submitted August 28, 1911, and as a result of the information obtained and submitted surveys were ordered, and it is in connection with this work that the following report is submitted.

2. As stated in the report on the preliminary examination, though these two localities are named jointly, they are separate and distinct places about 15 miles apart, but on the same route used by a large class of vessels.

BASS HARBOR BAR.

3. Data obtained by a survey at this locality is shown on tracing herewith, indicated as sheet No. 1. Characteristic soundings indicate that the best crossing is probably about 800 feet south of the light-house and show at that place apparently about 14 feet at mean low tide for a width of about 300 feet over the crest of the bar, which at that place is about 250 feet across, between the 15-foot contours. If work of improvement be undertaken it should be at this particular place for the following reasons: It is believed that better width and depth can be secured here at less cost than at any other place. While there is apparently fairly good water immediately to the north of the

11½-foot shoal, to secure the necessary width would involve much expense for ledge excavation, and it lies too close to the shore to make it safe in all winds. All the data showing soundings is, however, to be taken with reservation. The place is very rough, and a number of days passed before the surveying party could do satisfactory work on the bar. Lines of soundings were taken, but it was considered necessary to use a sweep, and while the data on the tracing as before stated, shows characteristic soundings, numerous bowlders and small patches of ledge which showed less depth were found in sweeping to such degree that developed it would not do to depend on a safe depth greater than 13 feet for a width of about 250 feet. Owing to the rough conditions maintaining on this bar fully satisfactory determination of the character and extent of the bottom was found impracticable within the scope of reasonable expense.

4. No new and reliable data was secured as to the commerce and other interests involved, except such as corroborate the information given in my report on the examination. At the time of the survey 22 schooners were counted at anchor in the harbor just to the west of the bar which had either just crossed or were awaiting an opportunity to do so. The party was on the work but a short time, as the operation was not extensive when once suitable weather conditions prevailed. Such information as was obtained strengthens my opinion that something should be done at this locality and that if a channel can be cleared across the bar it will be of great value to the multitude of sailing craft and passenger steamers that use the passage the year around and also to a great number of yachting craft which visit this part of the coast during the summer.

5. It is my impression that there is ignorance concerning the best place for crossing the bar. One steamboat captain indicated his habitual course as one which would take him directly across the 11½-foot shoal, which contains obstructions over which there is but 10 feet. Furthermore, the passage has not been satisfactorily marked. The tidal currents across the bar are strong, and without full favoring winds sailing vessels are usually obliged to wait for a favoring set of the current.

6. As a result of further investigation and personal interviews with a number of masters of vessels which regularly and frequently cross Bass Harbor Bar, I am of the opinion that work at that locality is justified, though I am unable to give any definite figures as to the character or amount of the commerce. It is a matter of common knowledge that this route is much frequented by a great number of coasting craft of whose movement there is no reliable record. The steamboat use is indicated in my report on the preliminary examination. The project suggested is one which I believe to be fully justified by the benefits to be derived and provides for a depth of not less than 14 feet at mean low tide for a width of 250 feet across the bar at the place shaded upon the tracing. This can be accomplished, it is estimated, at a cost not to exceed \$10,000. The work is of such character that it is not believed that satisfactory specifications can be drawn, and it will doubtless mean that such amount will be applied by the use of hired plant and day labor, involving submarine divers. It will be necessary at the same time to mark the channel, which I think should be done probably with two or more spindles, it being difficult to maintain anchored buoys on the bare

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ledge exposed to heavy seas. Owing to the exposed position and the hard bottom, there must be no question as to the integrity of the marks.

7. It is believed that there will be no cost for maintenance in connection with this work, except possibly what may be needed to keep the spindles or marks in order.

8. Nothing less than the full extent of improvement indicated above will be of any aid to commerce, so that I think that if the work be undertaken by the Government it should be done under a single appropriation of the full estimated amount.

DEER ISLAND THOROUGHFARE.

9. The results of the survey at this place are shown on the accompanying tracing marked 'Sheet No. 2.'

10. It develops that the obstructions to navigation lie at the westerly end of the thoroughfare, where the depth in general is good, but with numerous points of ledge projecting above the bottom in such number and in such positions as to make the passage both difficult and dangerous.

11. Information collected during the progress of the survey confirms the data submitted in my examination report, and also the desirability of work of improvement at this locality. On one day during the survey 37 schooners passed through. This, it is believed, represents a fair average day's business. Some of them had to be towed. Most of the vessels, perhaps nearly all, passing over Bass Harbor Bar also go through Deer Island Thoroughfare, and a large additional number load at the quarries in the immediate neighborhood. Besides the business to which reference was made in my report on the examination a great number of yachts use the thoroughfare, partly because of its being a protected route and partly because of the great scenic beauty for which the place is justly celebrated.

12. It may be observed from the map that the obstructing ledges give depths as shallow as 7 feet at mean low tide and that they lie within a longitudinal distance of about 1,300 feet. While there is a towboat stationed at Stonington, most of the craft make through under sail, so that a fair width is necessary in order to accommodate navigation. The improvement which I suggest for this place is to excavate to a depth of 15 feet at mean low tide the ledges lying within the area shaded on the tracing, or for a width of about 300 feet, which will in fact afford a width of about 400 feet to the depth indicated. This work will, it is estimated, cost \$40,000, and will involve the excavation of about 3,050 cubic yards of ledge.

13. All material above a plane of 15 feet below mean low tide is bare ledge, and I am assured from this and other indications that there will be no maintenance charges.

14. It is my opinion that the interests involved at this locality and the great convenience and safety which will be secured thereby fully justify this expenditure by the General Government.

15. In the interests of commerce, as well as the fact that the improvement would have to be practically completed before being of essential service, the whole estimated cost should be provided at a single appropriation and the work accomplished within a single working season.

W. E. CRAIGHILL.

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[First indorsement.]

OFFICE OF DIVISION ENGINEER,
NORTHEAST DIVISION,
New York City, September 18, 1912.

TO THE CHIEF OF ENGINEERS, UNITED STATES ARMY.

From personal knowledge of the localities, as well as from the reports of the preliminary examination and survey, I concur in the recommendations of the district engineer officer.

W. M. BLACK,
Colonel, Corps of Engineers.

[For report of the Board of Engineers for rivers and harbors on survey, see p. 2.]

SUPPLEMENTAL REPORT ON SURVEY OF BASS HARBOR BAR AND
DEER ISLAND THOROUGHFARE, ME.

UNITED STATES ENGINEER OFFICE,
Portland, Me., November 1, 1912.

From: Lieut. Col. W. E. CRAIGHILL, CORPS OF ENGINEERS.

To: The CHIEF OF ENGINEERS, UNITED STATES ARMY
(Through division engineer).

Subject: Survey of Bass Harbor Bar and Deer Island Thoroughfare, Me.

1. I have received by department indorsement dated October 26, 1912, a letter addressed to the Chief of Engineers, United States Army, from the Board of Engineers for Rivers and Harbors concerning my report submitted January 16, 1912, on the survey of Bass Harbor Bar and Deer Island Thoroughfare, Me.

2. The board states as follows:

1. The board has under consideration the report of the district officer on survey of Bass Harbor Bar and Deer Island Thoroughfare, Me. These localities are about 15 miles apart, and the district officer states that they are on the same route used by a large class of vessels. He submits a plan of improvement which provides for a depth of 14 feet at Bass Harbor Bar and a depth of 15 feet at Deer Island Thoroughfare. It is not clear to the board why there should be a depth of 15 feet at the latter if a depth of 14 feet will serve at the former, particularly as the Bass Harbor Bar channel appears to be more exposed than the one through Deer Island Thoroughfare. A reduction of 1 foot in the depth over the Deer Island Thoroughfare would materially lessen the cost.

2. The board requests that the district officer be asked to furnish information on this subject, and also regarding the draft of the vessels engaged in traffic through these channels.

3. It is true that the passage via Deer Island Thoroughfare and Bass Harbor Bar is on the same route used by a large class of vessels, but a further explanation is necessary to a clear understanding of the matter. Aside from other traffic Deer Island Thoroughfare is in the center of large granite industries and many vessels coming from the westward go no farther, but load at this place and return. As indicated in my report on the preliminary examination, dated August 28, 1911, the sailing vessels which frequent Stonington, a place of some importance on Deer Island Thoroughfare and in the midst of the granite industry, are from 78 to over 200 feet in length and draw from 7 to 24 feet. Deer Island Thoroughfare is a passage of recognized importance, is quite fully buoyed, and a part at least of its commerce can be definitely stated and its needs definitely known. There is

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fairly good water, but the passage is crooked, due to a number of dangerous ledges in irregular positions. My recommendation as to a project for this place, viz. 15 feet at mean low water, was made because, in my judgment, the amount of traffic and the resulting benefit would justify the estimated cost of \$40,000, because at least that depth was needed, and because the physical conditions allowed of such a project at moderate cost. Greater depth would be unduly expensive, and less will not adequately meet reasonable needs.

4. The depth suggested for Deer Island Thoroughfare is the result of a consideration of various factors pertaining to the situation. The demand of the most prominent interests was for a depth of 18 to 20 feet. The project suggested was that which would produce, in view of physical conditions, the greatest possible benefit at a reasonable expenditure. A greater depth would rapidly increase the cost, a depth of 18 feet for a width of 300 feet being estimated to cost about \$145,000. Anything less than 15 feet would scarcely provide an improvement worthy to be undertaken in the interest of navigation.

5. At Bass Harbor Bar the case is somewhat different. At Deer Island Thoroughfare the suggested project extends over a longitudinal distance of about 1,300 feet. At Bass Harbor Bar the crest of the bar is about 300 feet across. Much, in fact most, of the heavier traffic does not go beyond Deer Island Thoroughfare, but as to such as does go beyond heavier and larger vessels can take the deep and wide passage to the south and west of Bass Harbor Bar. (See Coast Survey Chart No. 308.) The improvement at Bass Harbor Bar was suggested in the interest of the small craft only, drawing, say, up to about 12 feet. As there is no local traffic at this place it was and is impracticable to do more than give a general impression of the business. A study was made of the situation, and 14 feet at mean low tide for a width of 250 feet across the bar is, in my opinion, all that is warranted at this locality, which it is estimated can be secured at a cost of \$10,000. One interest desired a depth of 20 feet at mean low tide, but the cost of this was prohibitive, as it is estimated that a depth of 20 feet for a width of 300 feet would cost nearly \$700,000. A depth of 16 feet for a width of 200 feet across the bar was estimated to cost about \$84,000. A depth of 15 feet was estimated to cost about \$50,000. There appeared to be no justification for the expenditure of these large amounts, and my recommendation for a 14-foot depth was in the interest of the smaller craft only.

W. E. CRAIGHILL.

[First indorsement.]

OFFICE OF DIVISION ENGINEER,
NORTHEAST DIVISION,
New York, November 5, 1912.

To Chief of Engineers, concurring in Col. Craighill's recommendations.

W. M. BLACK,
Colonel, Corps of Engineers

TESTS OF BOTTOM.

NO. OF BORING	DEPTH WATER BORING	PENE-TRATION	CHARACTER OF MATERIAL	NO. OF BORING	DEPTH WATER BORING	PENE-TRATION	CHARACTER OF MATERIAL
1	22.4	23.4	1.0	20	22.5	25.5	Gravel.
2	20.8	23.3	2.5	21	20.5	22.3	Sand to ledge.
3	20.1	22.9	2.8	22	20.2	23.1	Sticky mud.
4	18.5	21.2	2.7	23	20.0	22.9	Ledge.
5	17.8	21.3	3.5	24	16.3	23.0	Gravel.
6	17.1	19.0	0.0	25	16.5	16.5	0.0
7	14.0	14.0	0.0	26	18.7	20.7	2.0
8	16.8	18.8	0.0	27	18.7	20.4	1.7
9	18.4	18.4	0.0	28	16.5	16.5	0.0
10	19.3	20.1	0.8	29	13.6	12.0	0.0
11	18.8	20.0	1.2	30	15.8	16.4	0.0
12	11.9	11.9	0.0	31	16.0	17.0	1.0
13	16.6	19.1	2.5	32	13.3	13.3	0.0
14	15.5	16.6	1.1	33	20.0	22.3	2.3
15	15.8	19.7	3.9	34	19.2	22.2	3.0
16	17.0	19.2	2.2	35	19.7	21.7	2.0
17	18.4	20.3	1.9	36	15.6	17.8	0.0
18	18.7	19.9	1.2				
19	19.2	20.8	1.6				

DEER ISLE

GREEN'S HEAD

© GREEN SUMMIT

LEGEND.

Low Water Line, shown thus.	
3 foot curve.	
6 "	
9 "	
12 "	
15 "	
18 "	
21 "	
24 "	
27 "	
30 "	
36 "	
42 "	
48 "	

TRIANGULATION.

LINE	AZIMUTH	DISTANCE	LOGARITHM	STATION	COORDINATES		DESCRIPTION
					NORTH	EAST	
East Base - West Base	105° 28' 07"	395.50	2.9980387	East Base	2500.00	2500.00	Drill hole in small stone.
West Moose	82° 22' 33"	1510.30	3.1790643	West Moose	2765.51	1540.57	" " in ledge.
Yellow Rock	62° 09' 37"	1975.46	3.2956690	West Base	2299.63	1003.05	" " " "
Crotch No. 1	15° 42' 07"	2112.05	3.3247045	Yellow Rock	1577.42	753.18	" " " "
" No. 2	4° 25' 15"	1394.96	3.1445630	West Moose	1577.42	753.18	" " " "
" No. 3	324° 06' 18"	981.87	2.9920538	Benvenue	1966.23	3619.81	" " " "
Benvenue	295° 29' 07"	1240.51	3.0936018	West Green	3005.83	3316.25	" " " "
West Green	238° 12' 37"	960.30	2.9824092	Crotch Rock	2503.39	936.43	" " " "
West Moose - Yellow Rock	15° 05' 04"	764.21	2.8832177	Crotch	466.77	1928.41	" " " "
Crotch	1° 51' 43"	2550.39	3.3118371	West Base	229° 05' 02"	711.31	2.8520573
" No. 1	333° 12' 43"	2053.20	3.3124314	Crotch No. 1	1109.20	2392.47	" " " "
West Base	229° 05' 02"	711.31	2.8520573	Crotch No. 2	1704.59	3075.67	" " " "
Crotch No. 1 - Crotch Rock	77° 41' 41"	1015.31	3.0065868	Crotch No. 3	2235.57	4506.66	" " " "
Crotch No. 2 - West Base	152° 46' 54"	1862.56	3.2701091	Crotch No. 4	2235.57	4506.66	" " " "
Crotch No. 3	228° 55' 49"	806.23	2.9572390	Benvenue	1966.23	3619.81	" " " "
Crotch No. 3 - West Base	124° 38' 54"	1866.04	3.2709208	Benvenue	1966.23	3619.81	" " " "
West Green	190° 28' 27"	1923.41	3.1216957	Benvenue	1966.23	3619.81	" " " "
Benvenue	244° 19' 11"	1933.77	2.7808705	Benvenue	1966.23	3619.81	" " " "
Benvenue - West Green	163° 43' 24"	1093.08	3.0336893	Benvenue	1966.23	3619.81	" " " "
Middle Green	206° 29' 49"	1562.83	3.1939396	Benvenue	1966.23	3619.81	" " " "
Green Summit	211° 41' 20"	2068.07	3.3155649	Benvenue	1966.23	3619.81	" " " "
Thurlow	240° 13' 14"	1867.63	3.1932422	Benvenue	1966.23	3619.81	" " " "
Crotch No. 4	253° 06' 22"	926.84	2.9670086	Benvenue	1966.23	3619.81	" " " "
West Green - Green Summit	242° 36' 45"	1866.36	3.1946145	Benvenue	1966.23	3619.81	" " " "
Middle Green	250° 15' 45"	1063.33	3.0266684	Benvenue	1966.23	3619.81	" " " "
Thurlow	278° 55' 08"	1883.97	3.2263336	Benvenue	1966.23	3619.81	" " " "
Crotch No. 4	302° 54' 56"	1417.91	3.1516493	Benvenue	1966.23	3619.81	" " " "
Thurlow - Green Summit	164° 22' 59"	1018.78	3.0080800	Benvenue	1966.23	3619.81	" " " "
B.M. Knob	214° 55' 54"	2097.39	3.3216598	Benvenue	1966.23	3619.81	" " " "
Two Bush	258° 14' 53"	1301.87	3.1145673	Benvenue	1966.23	3619.81	" " " "
Green Summit	63° 24' 48"	1449.60	3.2173791	Benvenue	1966.23	3619.81	" " " "
Two Bush	114° 48' 07"	1705.33	3.2390691	Benvenue	1966.23	3619.81	" " " "
Water Tower	145° 41' 49"	3902.70	3.5913649	Benvenue	1966.23	3619.81	" " " "
B.M. Knob	177° 06' 00"	1456.13	3.1632008	Benvenue	1966.23	3619.81	" " " "
E.S.S.	215° 53' 10"	1976.42	3.2988793	Benvenue	1966.23	3619.81	" " " "
Round Island	270° 40' 30"	2807.79	3.4483642	Benvenue	1966.23	3619.81	" " " "
Round Island - B.M. Knob	117° 18' 13"	3242.48	3.5108773	Benvenue	1966.23	3619.81	" " " "
E.S.S.	134° 44' 24"	2321.87	3.3658371	Benvenue	1966.23	3619.81	" " " "
Barter	201° 23' 27"	2752.49	3.4397253	Benvenue	1966.23	3619.81	" " " "
Russ Island	255° 43' 46"	2704.88	3.4321478	Benvenue	1966.23	3619.81	" " " "
Barter	250° 42' 36"	2810.76	3.4488238	Benvenue	1966.23	3619.81	" " " "
Russ Island	283° 18' 59"	4400.00	3.6434523	Benvenue	1966.23	3619.81	" " " "
B.M. Knob	83° 11' 49"	1240.87	3.0937252	Benvenue	1966.23	3619.81	" " " "
Russ Island - Barter	140° 00' 45"	2534.53	3.4038972	Benvenue	1966.23	3619.81	" " " "
Water Tower	109° 02' 12"	8081.80	3.9075074	Benvenue	1966.23	3619.81	" " " "

NOTE.

The vicinity of Bass Harbor Bar and Deer Island Thoroughfare is shown on sheet I.
Distances are expressed in feet. Azimuths are referred to the True South as derived from the U.S.C. & G.S. line, Russ Island - Stonington Water Tower.
Positions of stations are expressed in rectangular coordinates which are referred to axes parallel and perpendicular to the True Meridian.
Depths are expressed in feet and are referred to Mean Low Water as indicated by the U.S.C. & G.S. Bench Mark No. 1 located about 65 feet East of station B.M. Knob. The elevation of this bench mark is 7.2 feet above Mean Low Water.
The mean range of tide is 9.66 feet.
Positions of borings are shown by solid circles near which the numbers of the borings are written.
To provide a depth of 15 feet at mean low tide over the shaded area

PROPOSED IMPROVEMENT.

To provide a depth of 15 feet at mean low tide over the shaded area

U.S. Engineer Office,
Portland, Maine, September 13, 1912.

Approved: *W. E. Craig*
Lieut. Col., Corps of Engineers, U.S. Army.
To accompany report of September 13, 1912,
to the Chief of Engineers.

BASS HARBOR BAR

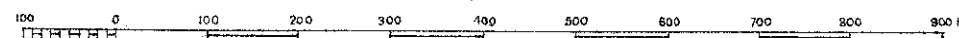
AND

DEER ISLAND THOROUGHFARE.

MAINE.

FROM SURVEY OF OCT. - NOV., 1911.

SCALE, 1:2500



Prepared under the direction of

LIEUT. COL. W. E. CRAIG, CORPS OF ENGINEERS, U.S. ARMY.

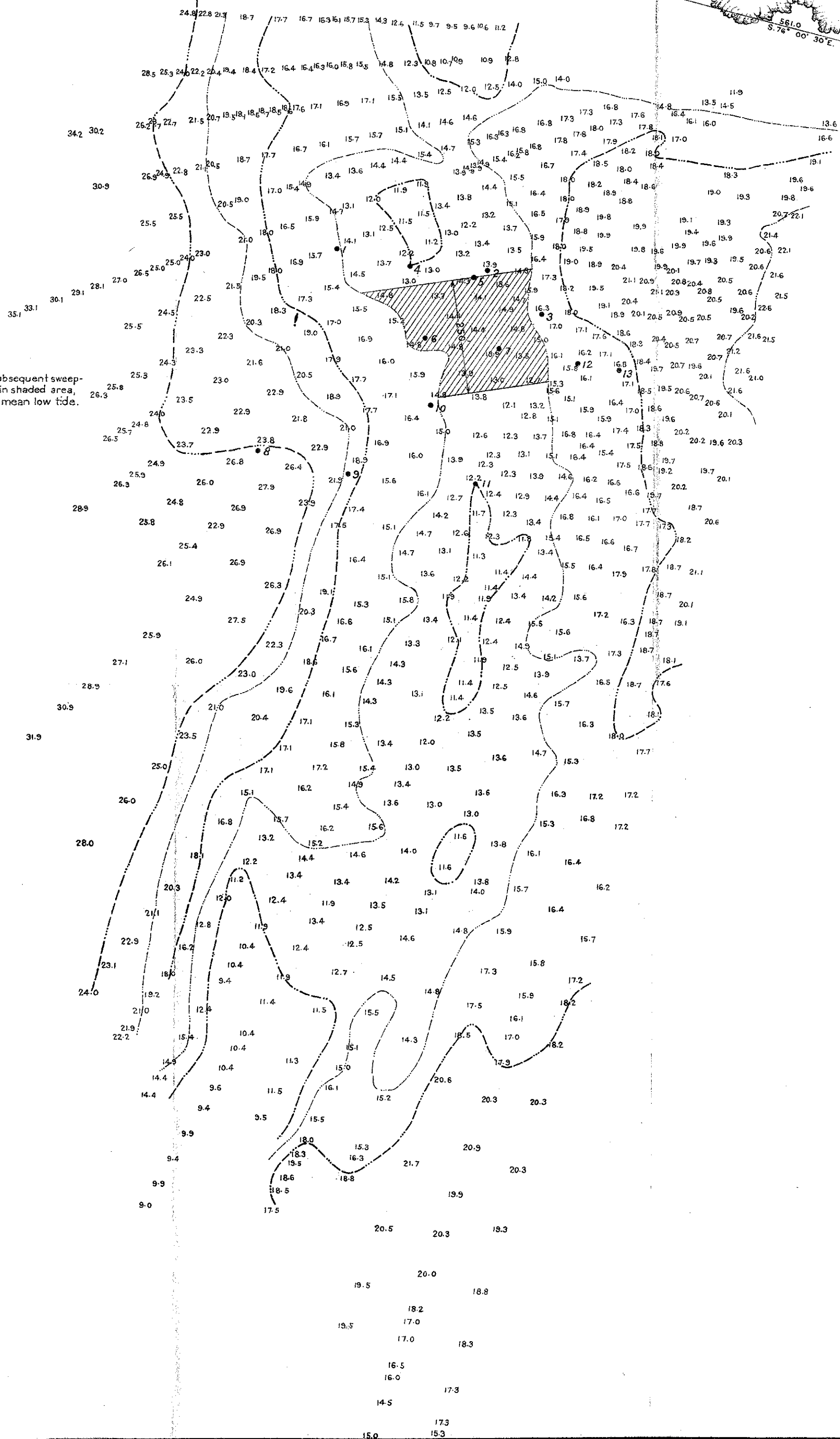
ASSISTANTS.

H. W. Hobbs, Asst. Engr. Thos. E. Forrest, Jun. Engr. in charge of survey.
Plotted by F. N. Scott, Draftsman, E. J. Finnigan, Surveyman. Traced by F. N. Scott, Draftsman.

IN TWO SHEETS - SHEET 2

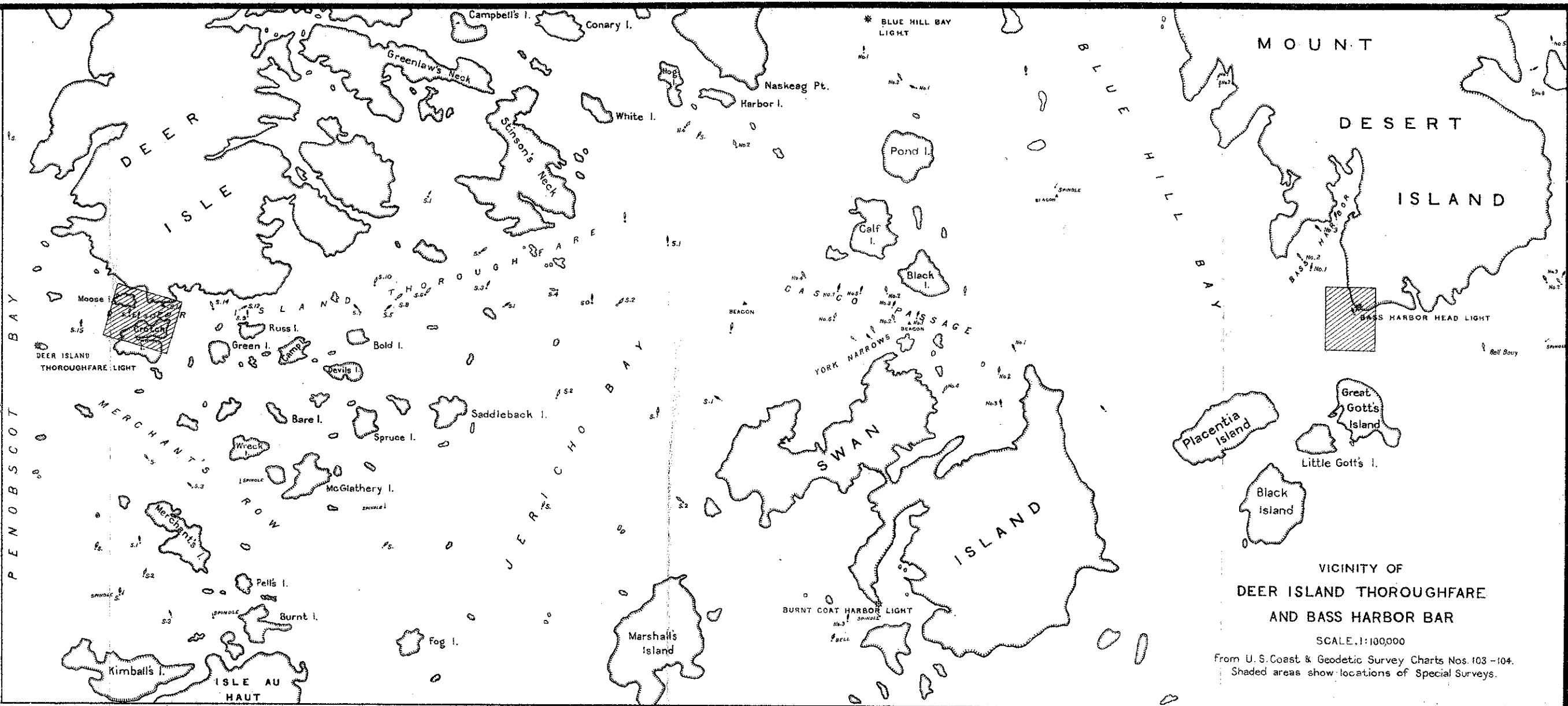
DEER ISLAND THOROUGHFARE

MOUNT DESERT ISLAND



NOTE.
Figures indicate soundings with lead. Subsequent sweeping disclosed numerous boulders and ledge in shaded area, over which depth is only about 13 feet at mean low tide.

Magnetic Meridian Nov. 1911.



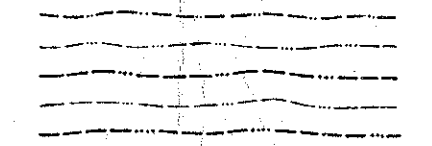
VICINITY OF
DEER ISLAND THOROUGHFARE
AND BASS HARBOR BAR
SCALE: 1:100000
From U. S. Coast & Geodetic Survey Charts Nos. 103-104.
Shaded areas show locations of Special Surveys.

TESTS OF BOTTOM.

NO. OF BORING	DEPTH		PENE-TRATION	CHARACTER OF MATERIAL
	WATER	BORING		
1	15.2	15.7	0.5	Rocks to ledge.
2	13.8	13.5	0.0	Bare ledge.
3	16.1	16.1	0.0	" "
4	11.6	11.6	0.0	" "
5	13.5	13.5	0.0	" "
6	14.2	14.8	0.6	Rocks to ledge.
7	14.1	14.5	0.5	" "
8	26.2			" "
9	19.8	23.3	3.5	Gravel and boulders to ledge.
10	15.6	15.6	0.0	Bare ledge.
11	11.8	11.8	0.0	" "
12	16.1	16.6	0.5	" "
13	16.7	17.1	0.4	Rocks to ledge.

NOTE.

Depths are expressed in feet and are referred to Mean Low Water as determined from the U. S. Coast & Geodetic Survey Bench Mark 3 (Ct. 11.04) at Bass Harbor.



PROPOSED IMPROVEMENT
To provide a depth of 14 feet at mean low tide over the shaded area.

BASS HARBOR BAR
AND
DEER ISLAND THOROUGHFARE,
MAINE
FROM SURVEY OF OCT.-NOV., 1911.

SCALE: 1:2500

Prepared under the direction of
LIEUT. COL. W. E. CRAIGHILL, CORPS OF ENGINEERS, U.S. ARMY.

ASSISTANTS:
H. W. Hobbs, Asst. Engr. Thos. E. Forrest, Jun. Engr. in charge of survey.
Plotted by L. E. Dow, Jun. Engr. Traced by F. N. Scott, Draftsman.

IN TWO SHEETS - SHEET 1
BASS HARBOR BAR

U. S. Engineer Office,
Portland, Maine, September 13, 1912.
Approved: *W. E. Craighill*
Lieut. Col., Corps of Engineers, U. S. Army.
To accompany report of September 13, 1912.
to the Chief of Engineers

4. *Bass Harbor Bar, Me.*—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island a distance of about 1 mile to Great Gotts Island. The locality is about 20 miles by water from Bar Harbor. The best crossing gave about 14 feet at mean low tide where the width between the 15-foot contours was about 250 feet, but numerous bowlders obstructed the crossing making it dangerous in rough weather, a very frequent condition. The mean tidal range is 10 feet.

The present project, which is the first for this locality, provides for a clear depth of not less than 14 feet at mean low tide for a width of 250 feet across the bar. The estimated cost was \$10,000. The project is based upon a report of an examination and survey printed, with map, as House Document No. 1128, Sixty-second Congress, third session. It was adopted by the act of March 4, 1913, by which the entire estimated cost was appropriated.

Work was commenced June 5, 1913, with a large steam lighter, and by the close of the fiscal year such progress had been made that it is expected the work will be completed about the middle of July. The total expenditures have been \$180.20, all for new work.

No statistics as to tonnage and value are available. The bar is an obstructive point on a route much used by both sail and steam craft, and the improvement is designed to improve the safety and regularity of the traffic.

Amount appropriated by river and harbor act approved Mar. 4, 1913.	\$10,000.00
June 30, 1913, amount expended during fiscal year, for works of improvement	180.20
July 1, 1913, balance unexpended	9,819.80
July 1, 1913, outstanding liabilities	1,613.34
July 1, 1913, balance available	8,206.46

A 4.

IMPROVEMENT OF BASS HARBOR BAR, ME.

The work at this locality is such that it was impracticable to prepare satisfactory specifications. A large steam lighter was placed at work June 5, 1913, and by the close of the year had removed about 854 cubic yards of cobblestones and gravel. It is expected that the work will be completed in July, 1913.

APPROPRIATION.

Mar. 4, 1913.	\$10,000
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COMMERCIAL STATISTICS.

No statistics as to tonnage and value are available. The bar is an obstructive point on a route much used by both sail and steam craft and the improvement is designated to improve the safety and regularity of the traffic.

2. *Preliminary examination and survey of Bass Harbor Bar and Deer Island Thoroughfare, Me.*—Reports dated August 28, 1911, September 13, and November 1, 1912, with maps, are printed in House Document No. 1128, Sixty-second Congress, third session. Plans of improvement, at estimated costs of \$10,000 and \$40,000, respectively, are presented.

4. *Bass Harbor Bar, Me.*—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island a distance of about 1 mile to Great Gotts Island. The locality is about 20 miles by water from Bar Harbor. The best crossing gave about 14 feet at mean low tide where the width between the 15-foot contours was about 250 feet, but numerous bowlders obstructed the crossing, making it dangerous in rough weather—a very frequent condition. The mean tidal range is 10 feet.

The present project, which is the first for this locality, provides for a clear depth of not less than 14 feet at mean low tide for a width of 250 feet across the bar. The estimated cost was \$10,000. The project is based upon a report of an examination and survey printed, with map, as House Document No. 1128, Sixty-second Congress, third session. It was adopted by the act of March 4, 1913, by which the entire estimated cost was appropriated.

The improvement is expected to be permanent.

The work of clearing the channel of obstructive bowlders, etc., which was commenced June 5, 1913, was completed the 17th of the following July, the total operations involving the removal of 1,149 cubic yards of material, largely cobblestones and gravel. This work was done by plant hired by the day.

The total amount expended up to the close of the fiscal year ending June 30, 1914, is \$4,076.13.

A clear depth of 14 feet has been secured across the bar in accordance with the project. If an examination indicates that the clear depth and width is maintained, no further work will be done beyond possibly some arrangement for indicating the channel.

No statistics as to tonnage and value are available. The bar is an obstructive point on a route much used by both sail and steam craft, and the improvement is designed to improve the safety and regularity of the traffic. It is reported that the channel is in general use, except by deep-draft vessels, which at low tide have to go outside.

July 1, 1913, balance unexpended.....	\$9, 819. 80
June 30, 1914, amount expended during fiscal year, for works of improvement.....	3, 895. 93

July 1, 1914, balance unexpended.....	5, 923. 87
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(See Appendix A 4.)

A 4.

IMPROVEMENT AT BASS HARBOR BAR, ME.

Expenditures during the fiscal year 1914 have been \$3,895.93. The work of removing cobblestones and gravel in clearing a channel across the bar, which was in progress with a large steam lighter at the close of the last fiscal year, was continued until July 17, 1913. The material removed during the fiscal year amounted to 295 cubic yards, and the aim in this respect was, for the present at least, accomplished. An examination will be made, and if the clear width and depth prove to be stable, no further work will be done except possibly some arrangement for satisfactorily indicating the channel.

APPROPRIATION.

Mar. 4, 1913..... \$10,000.00

COMMERCIAL STATISTICS.

There are no records of the vessels using the passage across the bar. The locality is somewhat remote. The light keeper reports that the vessels all use the passage that was cleaned out. The steamship people state that many vessels are using the channel, and it is understood that this route is generally taken advantage of, excepting deep-draft vessels and steamers, which reach the bar at low water, at which time they are obliged to go around.

It is impracticable to satisfactorily express the safety due to the cleaning out and deepening of the channel.

3. BASS HARBOR BAR, ME.

Location.—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island a distance of about 1 mile to Great Gotts Island. It obstructs the eastern entrance to Blue Hill Bay. The locality is about 20 miles by water from Bar Harbor. (See U. S. Coast and Geodetic Survey chart No. 6.)

Original condition.—The best crossing had about 14 feet at mean low tide where the width of the bar between the 15-foot contours was about 250 feet, but numerous bowlders obstructed the crossing, making it dangerous in rough weather—a frequent condition.

Previous projects.—None.

Present project.—To secure a clear depth of not less than 14 feet at mean low tide for a width of 250 feet across the bar. The mean range in tides is 10 feet. The estimated cost was \$10,000. This project (see H. Doc. No. 1128, 62d Cong., 3d sess.) was adopted by the river and harbor act of March 4, 1913, which provided the entire estimated cost.

Operations and results prior to the fiscal year.—During 1913 the channel was cleared of obstructive bowlders, etc., so as to give the full projected width and depth. Expenditures amounted to \$4,076.13, all for original work.

Operations and results during the fiscal year.—No work was done, the expenditures, amounting to \$778.33, being for office and other expenses. The improvement is under supervision and an examination will have to be made in order to determine whether or not more work will be necessary.

Condition at the end of fiscal year.—The work contemplated by the project has been accomplished, but whether or not permanent conditions have been secured will have to be determined by a survey. The total expenditures have been \$4,854.46, all for new work.

Local cooperation.—None.

Effect of improvement.—The work promotes safety and regularity of traffic at an obstructive point in a much used route. No effect on freight rates.

Proposed operations.—No estimate for 1917. The funds on hand are sufficient for any work that may be necessary.

Commercial statistics.—No statistics as to tonnage are available. The improvement is in general use, but there is no practicable way of ascertaining the number of vessels.

Financial summary.

Amount expended on all projects to June 30, 1915:

New work.....	\$4,854.46
Maintenance.....	

Amount expended during fiscal year ending June 30	1913	1914	1915
New work.....	\$180.20	\$3,895.93	\$778.33
Maintenance.....			

APPROPRIATIONS.

[For last five fiscal years only.]

March 4, 1913	\$10,000.00
July 1, 1914, balance unexpended	5,923.87
June 30, 1915, amount expended during fiscal year for works of improvement	778.33
July 1, 1915, balance unexpended	5,115.54

8. BASS HARBOR BAR, ME.

There was no work during the year. Expenditures were for office and other expense. The improvement is under supervision, and an examination will be made to determine whether or not more work will be necessary.

APPROPRIATION.

Mar. 4, 1913----- \$10,000

COMMERCIAL STATISTICS.

There are no records of the vessels using the passage across the bar. The locality is somewhat remote. The light keeper reports that the vessels all use the passage that was cleaned out. The steamship people state that many vessels are using the channel, and it is understood that this route is generally taken advantage of, excepting deep-draft vessels and steamers, which reach the bar at low water, at which time they are obliged to go around. It is impracticable to satisfactorily express the safety due to the cleaning out and deepening of the channel.

3. BASS HARBOR BAR, ME

Location and description.—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island a distance of about 1 mile to Great Gotts Island. It obstructs the eastern entrance to Blue Hill Bay. The locality is about 20 miles by water from Bar Harbor. (See U. S. Coast and Geodetic Survey chart No. 6.)

Original condition.—The bar, which is composed of ledge, boulders, and sand, was about 250 feet wide between the 15-foot contours at its narrowest part. The best crossing had about 14 feet at mean low tide, but it was obstructed by numerous boulders, making the crossing dangerous in rough weather—a frequent condition. The mean range of tide is 10 feet.

Previous projects.—None.

Existing project.—To secure a clear depth of not less than 14 feet at mean low tide across the bar for a width of 250 feet. The mean range of tide is 10 feet. The estimated cost was \$10,000. This project (see H. Doc. No. 1128, 62d Cong., 3d sess., with map) was adopted by the river and harbor act of March 4, 1913, which provided the entire estimated cost.

Operations and results during the fiscal year.—No work was done, the expenditures, amounting to \$408.39 for new work, were for office and other expenses. The improvement was under supervision.

Condition at the end of fiscal year.—The work contemplated by the project was accomplished early in the fiscal year 1914, but whether or not permanent conditions have been secured and whether or not more work will be necessary, will have to be determined by a survey. The total expenditures have been \$5,262.85, all for new work.

Local cooperation.—None.

Effect of improvement.—The work promotes safety and regularity of traffic at an obstructive point in a much-used route. No effect on freight rates.

Proposed operations.—No new funds needed. If an examination indicates that more work is necessary, the amount available will, it is believed, be sufficient.

Recommended modifications of project.—None.

Commercial statistics.—No statistics as to tonnage are available. The improvement is in general use, but there is no practicable way of ascertaining the number of vessels.

Financial summary.

Amount expended on all projects to June 30, 1916:

New work	\$5,262.85
Maintenance	

Amount expended during fiscal year ending June 30	1914	1915	1916
New work	\$3,891.93	\$778.33	\$408.39
Maintenance			

APPROPRIATIONS.

[For last five fiscal years only.]

Mar. 4, 1913	\$10,000.00
July 1, 1915, balance unexpended	5,145.54
June 30, 1916, amount expended during fiscal year, for works of improvement	408.39
July 1, 1916, balance unexpended	4,737.15
July 1, 1916, outstanding liabilities	95.83
July 1, 1916, balance available	4,641.32

3 BASS HARBOR BAR, ME.

There was no work during the year. Expenditures were for office expenses. The improvement is under supervision, and an examination will be made to determine whether or not more work will be necessary.

APPROPRIATIONS.

Present project, Mar. 4, 1913----- \$10,000

COMMERCIAL STATISTICS.

There are no records of the vessels using the passage across the bar. The locality is somewhat remote. The light keeper reports that the vessels all use the passage that was cleaned out. The steamship people state that many vessels are using the channel, and it is understood that this route is generally taken advantage of, excepting deep-draft vessels and steamers, which reach the bar at low water, at which time they are obliged to go around. It is impracticable to satisfactorily express the safety due to the cleaning out and deepening of the channel.

3. BASS HARBOR BAR, ME.

Location and description.—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island a distance of about 1 mile to Great Gotts Island. It obstructs the eastern entrance to Blue Hill Bay. The locality is about 20 miles by water from Bar Harbor. (See U. S. Coast and Geodetic Survey Chart No. 6.)

Original condition.—The bar, which is composed of ledge, bowlders, and sand, was about 250 feet wide between the 15-foot contours at its narrowest part. The best crossing had about 14 feet at mean low tide, but it was obstructed by numerous bowlders, making the crossing dangerous in rough weather—a frequent condition. The mean range of tide is 10 feet.

Previous projects.—None.

Existing project.—This provides for a channel across the bar 14 feet deep at mean low water and 250 feet wide. The mean tidal range is 10 feet; the extreme 11.6 feet. The estimated cost was \$10,000; no estimate for maintenance. The existing project was adopted by the river and harbor act of March 4, 1913, in accordance with the report published in House Document No. 1128, Sixty-second Congress, third session, which contains the latest published map.

Operations and results during the fiscal year.—No work was done, the expenditures, amounting to \$629.87 for maintenance were for office and other expenses. The improvement was under supervision.

Condition at the end of fiscal year.—The work contemplated by the project was accomplished early in the fiscal year 1914, but whether or not permanent conditions have been secured and whether or not more work will be necessary will have to be determined by a survey. The expenditures have been \$4,076.13 for new work and \$1,816.59 for maintenance, a total of \$5,892.72.

Local cooperation.—None.

Effect of improvement.—The work promotes safety and regularity of traffic at an obstructive point in a much-used route. No effect on freight rates.

Proposed operations.—No new funds needed. If an examination indicates that more work is necessary, the amount available will, it is believed, be sufficient.

Recommended modifications of project.—None.

References to published articles.—None.

Commercial statistics.—No statistics as to tonnage are available. The improvement is in general use, but there is no practicable way of ascertaining the number of vessels. The light keeper reports that the passage across the bar is used by a large number of small vessels and yachts in the summer, but that the water is too shoal for very large vessels except at high tide.

Financial summary.

Amount expended on all projects to June 30, 1917, exclusive of receipts from sales, etc.:

New work.....	\$4,076.13
Maintenance.....	1,816.59
Total expended.....	5,892.72
Total appropriations to June 30, 1917.....	10,000.00

Fiscal year ending June 30.	1913	1914	1915	1916	1917
Expended for new work.....	\$180.20	\$1,895.93			
Expended for maintenance.....			\$778.33	\$408.39	\$629.87
Appropriated or allotted.....	10,000.00				

July 1, 1916, balance unexpended..... \$4,737.15
 June 30, 1917, amount expended during fiscal year, for maintenance..... 629.87

July 1, 1917, balance unexpended..... 1,107.28

3. BASS HARBOR BAR, ME.

There was no work during the year. Expenditures were for office expenses. The improvement is under supervision, and an examination will be made to determine whether or not more work will be necessary.

APPROPRIATIONS.

Present project, Mar. 4, 1913	-----	\$10,000
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COMMERCIAL STATISTICS.

There are no records of the vessels using the passage across the bar. The locality is somewhat remote. The light keeper reports that the vessels all use the passage that was cleaned out. The steamship people state that many vessels are using the channel, and it is understood that this route is generally taken advantage of, excepting deep-draft vessels and steamers, which reach the bar at low water, at which time they are obliged to go around. It is impracticable to satisfactorily express the safety due to the cleaning out and deepening of the channel.

Location and description.—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island for a distance of about 1 mile to Great Gotts Island. It obstructs the eastern entrance to Blue Hill Bay. The locality is about 20 miles by water from Bar Harbor. See U. S. Coast and Geodetic Survey Chart No. 1106.

Original condition.—The bar, which is composed of ledge, bowlders, and sand, was about 250 feet wide between the 15-foot contours at its narrowest part. The best crossing had about 14 feet at mean low tide, but it was obstructed by numerous bowlders, making the crossing dangerous in rough weather—a frequent condition.

Previous projects.—None.

Existing project.—This provides for a channel across the bar, 14 feet deep at mean low tide and 250 feet wide. The mean tidal range is 10 feet; the extreme, 11.6 feet. The estimate of cost for new work, made in 1912, is \$10,000. It is expected that work of maintenance will be unnecessary.

The existing project was adopted by the river and harbor act of March 4, 1913 (H. Doc. No. 1128, 62d Cong., 3d sess.). The latest published map is in the project document.

Operations and results during fiscal year.—No work was done. The expenditures, amounting to \$225.13 for maintenance, were for office expenses. The improvement was under supervision.

Condition at end of fiscal year.—The existing project was completed in 1913. The controlling depth is 14 feet. The expenditures have been \$4,076.13 for new work, and \$2,041.72 for maintenance, a total of \$6,117.85.

Local cooperation.—None.

Terminal facilities.—None.

Effect of improvement.—The work promotes safety and regularity of traffic at an obstructive point in a much-used route. No effect on freight rates.

Proposed operations.—No new funds needed. If an examination indicates that more work is necessary, the amount available will, it is believed, be sufficient.

Recommended modifications of project.—None.

References to published articles not previously reported.—None.

Commercial statistics.—No statistics as to tonnage are available. The improvement is in general use, but there is no practicable way of ascertaining the number of vessels.

The lighthouse inspector states that the passage appears to be increasingly used by small vessels. The water is too shoal for very large vessels except at high tide.

Financial summary.

Amount expended on all projects to June 30, 1918:	
New work	\$4, 076. 13
Maintenance	2, 041. 72
Net total expended.....	<u>6, 117. 85</u>
Total appropriations to date of this report.....	10, 000. 00

Fiscal year ending June 30.	1914	1915	1916	1917	1918
Expended for new work.....	\$3,895 93				
Expended for maintenance.....		\$778 33	\$408 39	\$629 87	\$225 13
Appropriated or allotted.....					

July 1, 1917, balance unexpended.....	\$4, 107. 28
June 30, 1918, amount expended during fiscal year for maintenance...	225. 13
July 1, 1918, balance unexpended.....	3, 882. 15
July 1, 1918, outstanding liabilities.....	95. 83
July 1, 1918, balance available.....	<u>3, 786. 32</u>

3. BASS HARBOR BAR, ME.

OPERATIONS DURING THE FISCAL YEAR.

There was no work during the year. Expenditures were for administration, and are charged to maintenance. The improvement is under supervision.

CONTRACTS IN FORCE.

None.

COMMERCIAL STATISTICS.

Length of navigation season, calendar year 1917, about 11 months.

The lighthouse inspector states that the passage appears to be increasingly used by small vessels. The water is too shoal for very large vessels except at high tide. The locality is somewhat remote and there are no records of vessels using the passage across the bar.

APPROPRIATIONS.

Present project, Mar. 4, 1913 \$10,000

3. BASS HARBOR BAR, ME.

Location and description.—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island for a distance of about 1 mile to Great Gotts Island. It obstructs the eastern entrance to Blue Hill Bay. The locality is about 20 miles by water from Bar Harbor. See U. S. Coast and Geodetic Survey Chart No. 1106.

Original condition.—The bar, which is composed of ledge, bowlders, and sand, was about 250 feet wide between the 15-foot contours at its narrowest part. The best crossing had about 14 feet at mean low tide, but it was obstructed by numerous bowlders, making the crossing dangerous in rough weather—a frequent condition.

Previous projects.—None.

Existing project.—This provides for a channel across the bar, 14 feet deep at mean low tide and 250 feet wide. The mean tidal range is 10 feet; the extreme, 11.6 feet. The estimate of cost for new work, made in 1912, is \$10,000. It is expected that work of maintenance will be unnecessary.

The existing project was adopted by the river and harbor act of March 4, 1913 (H. Doc. No. 1128, 62d Cong., 3d sess.). The latest published map is in the project document.

Operations and results during fiscal year.—No work was done. The improvement was under supervision. The expenditures, amounting to \$809.16 for maintenance, were for office expenses.

Condition at end of fiscal year.—The existing project was completed in 1913. The controlling depth is 14 feet. The expenditures have been \$4,076.13 for new work, and \$2,850.88 for maintenance, a total of \$6,927.01.

Local cooperation.—None.

Terminal facilities.—None.

Effect of improvement.—The work promotes safety and regularity of traffic at an obstructive point in a much-used route. No effect on freight rates.

Proposed operations.—No new funds needed. If an examination indicates that more work is necessary, the amount available will, it is believed, be sufficient.

Recommended modifications of project.—None.

References to published articles not previously reported.—None.

Commercial statistics.—No statistics as to tonnage are available. The improvement is in general use, but there is no practicable way of ascertaining the number of vessels.

The lighthouse inspector states that the passage appears to be increasingly used by small vessels. The water is too shoal for very large vessels except at high tide.

Financial summary.

Amount expended on all projects to June 30, 1919:

New work.....	\$4, 076. 13
Maintenance.....	2, 850. 88
Net total expended.....	<u>6, 927. 01</u>

Total appropriations to date of this report..... 10, 000. 00

Fiscal year ending June 30.	1915	1916	1917	1918	1919
Expended for new work.....					
Expended for maintenance.....	\$778. 33	\$108. 39	\$629. 87	\$225. 13	\$809. 16
Appropriated or allotted.....					

July 1, 1918, balance unexpended..... \$3, 882. 15

June 30, 1919, amount expended during fiscal year, for maintenance..... 809. 16

July 1, 1919, balance unexpended..... 3, 072. 99

- 1919 -

3. BASS HARBOR BAR, ME.

OPERATIONS DURING THE FISCAL YEAR.

There was no work during the year. Expenditures amounting to \$809.16 were for administration, and are charged to maintenance. The improvement is under supervision.

CONTRACTS IN FORCE.

None.

COMMERCIAL STATISTICS.

Length of navigation season, calendar year 1918, about 11 months.
The lighthouse inspector states that the passage appears to be increasingly used by small vessels. The water is too shoal for very large vessels, except at high tide. The locality is somewhat remote, and there are no records of vessels using the passage across the bar.

APPROPRIATIONS.

Present project, Mar. 4, 1913----- \$10,000

1920.

3. BASS HARBOR BAR, ME.

Location and description.—Bass Harbor Bar is a shoal extending from the southerly extremity of Mount Desert Island for a distance of about 1 mile to Great Gotts Island. It obstructs the eastern entrance to Blue Hill Bay. The locality is about 20 miles by water from Bar Harbor. See U. S. Coast and Geodetic Survey Chart No. 1106.

Original condition.—The bar, which is composed of ledge, bowlders, and sand, was about 250 feet wide between the 15-foot contours at its narrowest part. The best crossing had about 14 feet at mean low tide, but it was obstructed by numerous bowlders, making the crossing dangerous in rough weather—a frequent condition.

Previous projects.—None.

Existing project.—This provides for a channel across the bar 14 feet deep at mean low tide and 250 feet wide. The mean tidal range is 10 feet; the extreme, 11.6 feet. The estimate of cost for new work, made in 1912, is \$10,000. It is expected that work of maintenance will be unnecessary.

The existing project was adopted by the river and harbor act of March 4, 1913 (H. Doc. No. 1128, 62d Cong., 3d sess.). The latest published map is in the project document.

Operations and results during fiscal year.—An examination in May, 1920, indicated that no further work was needed. Expenditures amounting to \$567.32 for maintenance were for office expenses and supervision.

Condition at end of fiscal year.—The existing project was completed in 1913, and the examination made in May, 1920, indicated that the project depth of 14 feet at mean low tide had been maintained. Expenditures have been \$4,076.13 for new work and \$3,418.20 for maintenance, a total of \$7,494.33.

Local cooperation.—None.

Terminal facilities.—None.

Effect of improvement.—The work promotes safety and regularity of traffic at an obstructive point in a much-used route. No effect on freight rates.

Proposed operations.—Nothing is proposed. The work is completed and no further reports will be rendered.

Recommended modifications of project.—None.

References to published articles not previously reported.—None.

Commercial statistics.—No statistics as to tonnage are available. The improvement is in general use, but there is no practicable way of ascertaining the number of vessels.

The channel provides a short cut for coastwise vessels skirting the southern shore of Mount Desert Island and does not otherwise affect Bass Harbor itself, which lies to the westward. The commerce of the latter during the calendar year 1919 consisted in 1,575 short tons of canned goods, valued at \$675,000, and 1,500 short tons of fish, valued at \$90,000, all of which were shipped from McKinley, and proceeding westward did not cross Bass Harbor Bar.

Financial summary.

Amount expended on all projects to June 30, 1920:

New work.....	\$4,076. 13
Maintenance.....	3,418. 20
Net total expended.....	7,494. 33
Total appropriations to date of this report.....	10,000 00

Fiscal year ending June 30—	1916	1917	1918	1919	1920
Expended for new work.....					
Expended for maintenance.....	\$108. 39	\$629. 87	\$225. 13	\$809. 10	\$567. 32
Appropriated or allotted.....					

July 1, 1919, balance unexpended.....	\$3,072. 99
June 30, 1920, amount expended during fiscal year, for maintenance..	567. 32
July 1, 1920, balance unexpended.....	2,505. 67

1920.

3. BASS HARBOR BAR, ME

OPERATIONS DURING THE FISCAL YEAR.

There was no work. An examination in May, 1920, indicated that the depth secured in 1913 had been maintained. Expenditures amounted to \$567.32 for administration, and are charged to maintenance.

CONTRACTS IN FORCE.

None.

APPROPRIATIONS.

Present project, Mar. 4, 1913	\$10,000
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